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<p>(21) International Application Number: <b>PCT/US99/23243</b></p> <p>(22) International Filing Date: 5 October 1999 (05.10.99)</p> <p>(30) Priority Data:            60/103,120 5 October 1998 (05.10.98) US            60/111,590 9 December 1998 (09.12.98) US         </p> <p>(71) Applicants: THE B.F. GOODRICH COMPANY [US/US]; 4020 Kinross Lakes Parkway, Richfield, OH 44286-9368 (US). PENN STATE RESEARCH FOUNDATION [US/US]; 304 Old Main, University Park, PA 16802 (US).</p> <p>(72) Inventors: LIPIAN, John-Henry; Apartment 206, 12631 Walnut Hills Drive, North Royalton, OH 44133 (US). RHODES, Larry, F.; 3036 Vincent Road, Silverlake, OH 44224 (US). GOODALL, Brian, L.; The Albemarle Corporation, Research and Development, 8000 GSRI Avenue, Baton Rouge, LA 70820 (US). BELL, Andrew; 1511 Lewis Drive, Lakewood, OH 44107 (US). MIMNA, Richard, A.; Apartment 1, 2679 Hampshire Road, Cleveland Heights, OH 44106 (US). FONDTRAN, John, C.; Apartment 1, 2504 Derbyshire Road, Cleveland Heights, OH 44106 (US). HENNIS, April, D.; 626 South Pugh Street, State College, PA 16801 (US). ELIA, Christine, N.; 1231 South Allen Street, State College, PA 16801 (US). POLLEY,</p>		Jennifer, D.; 204 Kent Drive, Exton, PA 19341 (US). SEN, Ayusman; 1529 Chaumont Avenue, State College, PA 16801 (US). SAIKUMAR, Jayaraman; 12185 Waywood Drive, Twinsburg, OH 44087 (US).	
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<p><b>Published</b>  <i>With international search report.</i> </p>			
<p>(54) Title: CATALYST AND METHODS FOR POLYMERIZING CYCLOCOLEFINS</p> <p>(57) Abstract</p> <p>Methods for the addition polymerization of cycloolefins using a cationic Group 10 metal complex and a weakly coordinating anion of the formula: <math>[(R')_zM(L')_x(L'')_y]_b[WCA]_d</math> wherein <math>[(R')_zM(L')_x(L'')_y]</math> is a cation complex where M represents a Group 10 transition metal; R' represents an anionic hydrocarbyl containing ligand; L' represents a Group 15 neutral electron donor ligand; L'' represents a labile neutral electron donor ligand; x is 1 or 2; and y is 0, 1, 2, or 3; and z is 0 or 1, wherein the sum of x, y, and z is 4; and <math>[WCA]</math> represents a weakly coordinating counteranion complex; and b and d are numbers representing the number of times the cation complex and weakly coordinating counteranion complex are taken to balance the electronic charge on the overall catalyst complex.</p>			